

# Things to Know, Understand, and Do

## AF Chapter 1: Matter and Change

*By the end of Chapter 1, you should*

|  |
|--|
| <b>Know how to...</b>  |
| Define chemistry   |
| List, define, and tell the difference between the six branches of chemistry  |
| Give the four defining points of matter  |
| Define <i>Kinetic</i> and <i>Potential</i> Energy  |
| Recognize the different states of matter (solid, liquid and gas) and give their characteristics  |
| Explain the difference between chemical and physical changes and give examples of them.  |
| List commonly used physical properties of matter   |
| Identify several physical properties of common substances  |
| Tell when a chemical reaction has taken place as well whether it was exothermic or endothermic   |
| Appreciate the difference between <i>pure substances</i> and <i>mixtures</i> and the difference between <i>homogeneous</i> and <i>heterogeneous mixtures</i> |
| Classify the 3 types of mixtures ( <i>suspensions, solutions, and colloids</i> )   |
| Classify the 2 types of pure substances ( <i>elements and compounds</i> )  |
| Identify the name or symbol for the first 36 elements, given its symbol or name  |
| Use the terms atom, element, molecule, and compound correctly  |
| Define and identify the periodic table locations of groups, periods, metals, metalloids, nonmetals   |
| Recognize similarities and differences in the properties of the common elements in a group   |
| <b>Understand...</b>   |
| The laws of conservation of matter and energy  |
| The difference between weight and mass   |
| Extensive and intensive physical properties  |
| A color change does not always mean a chemical reaction has taken place  |
| How to tell the difference between a colloid, solution, and suspension   |
| The law of definite composition  |

### Chapter 1 Homework

Read Ch 1

Answer the following questions

|      |                    |
|------|--------------------|
| p 7  | Q 2                |
| p 18 | Q 1, 2             |
| p 24 | Q 3, 4             |
| p 26 | Q 2, 6, 16, 19, 21 |